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Jenna M. Morrison, Patent Attorney

REQUEST FOR CERTIFICATE OF CORRECTION UNDER 37 CFR 1.322
Docket No. PI-120
Patent No. 6,855,458

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Jong Seob Kim, Young Gyu Kim, Tu Won Chang, Kwang Sik Kim, Jin Sung Kim, Ky Hoon Ahn
Issued	:	Feb 15, 2005
Patent No.	:	6,855,458 B1
For	:	Non-Aqueous Electrolyte Composition for Batteries

Mail Stop Certificate of Corrections Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR CERTIFICATE OF CORRECTION
UNDER 37 CFR 1.322 (OFFICE MISTAKE)

Sir:

A Certificate of Correction (in duplicate) for the above-identified patent has been prepared and is attached hereto.

In the left-hand column below is the column and line number where errors occurred in the patent. In the right-hand column is the page and line number in the application where the correct information appears.

Patent Reads:	**Application Reads:**
Column 2, line 13:	Page 3, line 3:
"5FB95CE"	--5FB:95CE --
Column 2, line 48:	Page3, line 21:
"14 carbon atoms"	--1-4 carbon atoms--.

Patent Reads:	**Application Reads:**
Column 5, line 37:	Page 9, line 12:
"below to"	-- below, to --
Column 9, line 12:	Page 13, line 26:
"Discbargeability"	--Dischargeability--
Column 8, line 20:	Claim 4, line 4:
"ethyhmethyl"	--ethylmethyl--

A true and correct copy of pages 3, 9, 11 of the specification as filed, which support Applicants' assertion of errors on the part of the Patent Office, accompanies this Certificate of Correction.

Approval of the Certificate of Correction is respectfully requested.

Respectfully submitted,

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Attachments: Certificate of Correction;
Copies of the pages 3, 9, 11 of the specification.

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UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 6,855,458 B1

DATED : February 15, 2005

INVENTORS : Jong Seob Kim, Young Gyu Kim, Tu Won Chang, Kwang Sik Kim, Jin Sung Kim, Ky Hoon Ahn

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 2,
Line 13, "5FB95CE" should read --5FB: 95CE--.
Line 48, "14 carbon atoms" should read --1-4 carbon atoms--.

Column 5,
Line 37, "below to" should read --below, to--.

Column 6,
Line 22, "Discbargeability" should read --Dischargeability--.

Column 8,
Line 20, "ethyhmethyl" should read –ethylmethyl--.

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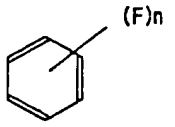
PATENT NO. 6,821,526
No. of additional copies

JUN 07 2005

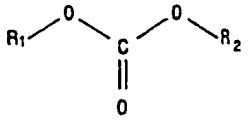
in an organic solvent system composed of a fluorobenzene component (FB) and a carbonic acid ester component (CE), wherein the solvent components are present in a volume percent ratio range from 50 FB : 50 CE to 5 FB : 95 CE, said fluorobenzene component being one or more compounds represented by the following general formula1 :

[Formula 1]



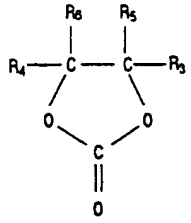
wherein F represents a fluorine element and n is an integer of 1-6; said carbonic acid ester component being one or more compounds represented by the following general formulas 2 and 3:

[Formula 2]



wherein R_1 and R_2, which may be the same or different, each represents an alkyl radical containing 1-4 carbon atoms.

[Formula 3]



wherein R_3, R_4, R_5 and R_6, which may be the same or different, each represents a hydrogen atom or an alkyl radical containing 1-4 carbon atoms.

10	EC:DMC:DEC:1,2,4-TFB =3:3:1:1	88.3	81.3	77.5
C.2	EC:DMC=1:1	87.5	28.7	81.5
C.3	EC:DMC:DEC=3:3:1	85.5	83.1	76.1

Note : EC=ethylene carbonate, DMC=dimethyl carbonate
DEC=diethyl carbonate, FB=fluorobenzene
DFB=difluorobenzene, TFB=trifluorobenzene

EXAMPLES 11 THROUGH 15

In these examples, two compounds of the general formula 3, and one compound of each of the general formulas 1 and 2, were mixed at different ratios within the volume range of the present invention and evaluated for their influence on the properties of cells, especially standard capacity against nominal capacity. Ethylene carbonate (EC), dimethyl carbonate (DMC), propylene carbonate (PC), and fluorobenzene (FB) were mixed at volume ratios according to the instructions of Table 3, below, to prepare cells. An examination was made of the standard capacity/nominal capacity ratio (%), the discharge/nominal capacity ratio (%) at -20 °C, and the discharge/nominal capacity ratio (%) after 300 cycles to evaluate the life performance of the cell. The results are given in Table 3, below.

COMPARATIVE EXAMPLES 4 THROUGH 7

Cells were prepared in a similar manner to that of Example 1, except that solvents were used as indicated in Table 3, below. The evaluation of the properties of the cells was conducted as in Example 1 and the results are shown in Table 3, below.

	=4,5:4.5:1			
C.6	EC:EMC:PC =4.5:4.5:1	96.5	67.4	74.0
C.7	EC:DMC:PC:TFT =3:3:1:1	95.5	75.4	35 (after 200 cycles)

Note : EC=ethylene carbonate, DMC=dimethyl carbonate
PC=propylene carbonate, EMC=ethylmethyl carbonate
FB=fluorobenzene, TFT=ααα-fluorotoluene

Assay for Physical Properties

* Low Temperature Dischargeability (%Discharge capacity/nominal capacity at -20 °C): when a cell was charged at 0.2 C to the potential of 4.1 V, allowed to stand at -20 °C for 16 hours, and discharged at 0.2 C to the potential of 2.75 V, the capacity decrease was measured.

* Cycle Life (%Discharge capacity/nominal capacity after cycles): after 150-300 cycles, each cycle consisting of charging up to 4.1 V and discharging down to 2.75 V at 1 C, a cell was measured for the decrease of cell capacity.

* High Temperature Storage Test (% Discharge capacity after storage at 60 °C): a cell was charged at 0.5 C to 4.1 V, allowed to stand at 60 °C for 30 days, and discharged at 0.2 C to 2.75 V, followed by measuring the decrease of cell capacity (discharge capacity/nominal capacity).

* Standard Capacity: cell capacity shown when a cell was discharged at 1 C to 2.75 V after being charged at 0.5 C to 4.1 V.